CLAIMS:

1. A low-pressure mercury vapor discharge lamp comprising an at least partly substantially cylindrical discharge vessel (10) with a length L_{dv} and with an internal diameter D_{in},

the discharge vessel (10) enclosing, in a gastight manner, a discharge space (13) provided with a inert gas mixture and with mercury,

the discharge vessel (10) comprising discharge means for maintaining a discharge in the discharge space (13),

characterized in that

the ratio of the weight of mercury m_{Hg} in the discharge vessel (10) to the product of the internal diameter D_{in} and the length of the discharge vessel L_{dv} is given by the relation:

$$\frac{m_{Hg}}{D_{in} \times L_{dv}} = C,$$

wherein $C \leq 0.01$ μg/mm^2.

2. A low-pressure mercury vapor discharge lamp as claimed in claim 1, characterized in that $0.0005 \leq C \leq 0.005$ μg/mm^2.

3. A low-pressure mercury vapor discharge lamp comprising an at least partly substantially cylindrical discharge vessel (10) with a length L_{dv} and with an internal diameter D_{in},

the discharge vessel (10) enclosing, in a gastight manner, a discharge space (13) provided with a inert gas mixture and with mercury,

the discharge vessel (10) comprising discharge means for maintaining a discharge in the discharge space (13),

characterized in that

the product of the mercury pressure p_{Hg} and the internal diameter D_{in} of the discharge vessel lies in a range expressed by $0.13 \leq p_{Hg} \times D_{in} \leq 8$ Pa.cm.

4. A low-pressure mercury vapor discharge lamp as claimed in claim 3, characterized in that the product of the mercury pressure p_{Hg} and the internal diameter D_{in} of the discharge vessel lies in a range expressed by $0.13 \leq p_{Hg} \times D_{in} \leq 4$ Pa.cm.

5. A low-pressure mercury vapor discharge lamp as claimed in claim 1, 2, 3, or 4, characterized in that the discharge vessel (10) contains less than 0.1 mg mercury.

6. A low-pressure mercury vapor discharge lamp as claimed in claim 1, 2, 3, or 4, characterized

in that the discharge means comprises electrodes (20a; 20b) arranged in the discharge space (13),

in that an electrode shield (22a; 22b) at least substantially surrounds at least one of the electrodes (20a; 20b), and

in that the electrode shield (22a; 22b) is made from a ceramic material or from stainless steel.

7. A low-pressure mercury vapor discharge lamp as claimed in claim 1, 2, 3, or 4, characterized

in that the means for maintaining an electric discharge are situated outside a discharge space surrounded by the discharge vessel, and

in that said means comprise a coil provided with a winding of an electrical conductor, with a high-frequency voltage, for example having a frequency of approximately 3 MHz, being supplied to said coil in operation.

8. A low-pressure mercury vapor discharge lamp as claimed in claim 1, 2, 3, or 4, characterized in that the product of the pressure of the inert gas mixture p_{igm} and the internal diameter D_{in} of the discharge vessel (10) lies in a range expressed by $p_{igm} \times D_{in} \geq 5.2$ Pa.m.

9. A low-pressure mercury vapor discharge lamp as claimed in claim 8, characterized in that $p_{igm} \times D_{in} \geq 8$ Pa.m.

10. A low-pressure mercury vapor discharge lamp as claimed in claim 1, 2, 3, or 4, characterized

in that at least a portion of an inner wall of the discharge vessel (10) is provided with a protective layer (17), and

in that the protective layer (17) comprises a material selected from the group formed by oxides of scandium, yttrium, and a further rare-earth metal, and/or a material selected from the group formed by borates of an alkaline-earth metal, scandium, yttrium, and a further rare-earth metal, and/or a material selected from the group formed by phosphates of an alkaline-earth metal, scandium, yttrium, and a further rare-earth metal.

11. A low-pressure mercury vapor discharge lamp as claimed in claim 10, characterized in that the alkaline-earth metal is calcium, strontium, and/or barium.

12. A low-pressure mercury vapor discharge lamp as claimed in claim 10, characterized in that the further rare-earth metal is lanthanum, cerium, and/or gadolinium.

13. A low-pressure mercury vapor discharge lamp as claimed in claim 10, characterized in that the oxide is yttrium oxide and/or gadolinium oxide.

14. A low-pressure mercury vapor discharge lamp as claimed in claim 10, characterized in that the discharge vessel (10) is made from a glass comprising silicon dioxide and sodium oxide, with a glass composition comprising the following essential constituents, given in percentages by weight (wt.%): 60-80 wt.% SiO_2 and 10-20 wt.% Na_2O.

15. A low-pressure mercury vapor discharge lamp as claimed in claim 14, characterized in that the glass composition comprises the following constituents: 70-75 wt.% SiO_2, 15-18 wt.% Na_2O, and 0.25-2 wt.% K_2O.

16. A low-pressure mercury vapor discharge lamp as claimed in claim 1, 2, 3, or 4, characterized in that the discharge vessel (10) is made from a glass that is substantially free of PbO and comprises, expressed as a percentage by weight, the following constituents: 55–70 wt.% SiO_2, <0.1 wt.% Al_2O_3, 0.5–4 wt.% Li_2O, 0.5–3 wt.% Na_2O, 10–15 wt.% K_2O, 0–3 wt.% MgO, 0–4 wt.% CaO, 0.5–5 wt.% SrO, 7–10 wt.% BaO.

17. The low-pressure mercury vapor discharge lamp as claimed in claim 16, characterized in that the composition of the discharge vessel comprises: 65–70 wt.% SiO_2,

1.4–2.2 wt.% Li_2O, 1.5–2.5 wt.% Na_2O, 11–12.3 wt.% K_2O, 1.8–2.6 wt.% MgO, 2.5–5 wt.% CaO, 2–3.5 wt.% SrO, 8–9.5 wt.% BaO.

18. The low-pressure mercury vapor discharge lamp as claimed in claim 16, characterized in that the composition of the discharge vessel in addition comprises: 0.01–0.2 wt.% Fe_2O_3 and/or 0.01–0.2 wt.% CeO_2, and/or 0.01–0.15 wt.% SO_3.

19. The low-pressure mercury vapor discharge lamp as claimed in claim 16, characterized in that the sum of the concentrations of Li_2O, Na_2O, and K_2O lies in a range from 14 to 16 wt.% and/or the sum of the concentrations of SrO and BaO lies in a range from 10 to 12.5 wt.%.

20. The low-pressure mercury vapor discharge lamp as claimed in claim 1, 2, 3, or 4, characterized in that the discharge vessel is provided with a luminescent layer comprising a luminescent material at a side facing away from the discharge space.

21. The low-pressure mercury vapor discharge lamp as claimed in claim 20, characterized in that the luminescent layer is embedded in an inorganic matrix material.

22. A compact fluorescent lamp comprising a low-pressure mercury-vapor discharge lamp as claimed in claim 1, 2, 3, or 4, characterized in that a lamp housing (70) is attached to the discharge vessel (10) of the low-pressure mercury-vapor discharge lamp, which lamp housing is provided with a lamp cap (71).